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C O R R E C T E D COPY - ADDED SENSITIVE CAPTION

SENSITIVE

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DEPT PASS USAID LAC/RSD,LAC/SAM,G/ENV,PPC/ENV
TREASURY FOR USED IBRD AND IDB AND INTL/MDB
USDA FOR FOREST SERVICE: LIZ MAHEW
USDA FOR FOREIGN AGRICULTURE SERVICE:CJACKSON
INTERIOR FOR DIR INT AFFAIRS: KWASHBURN
INTERIOR FOR FWS: TOM RILEY
INTERIOR FOR NPS: JONATHAN PUTNAM
INTERIOR PASS USGS FOR INTERNATIONAL: JWEAVER
JUSTICE, ENVIRONMENT NATURAL RESOURCES:JWEBB
EPA FOR INTERNATIONAL: CAM HILL-MACON
USDA FOR ARS/INTERNATIONAL RESEARCH: GFLANLEY
NSF FOR INTERNATIONAL: HAROLD STOLBERG

E.O. 12958: N/A

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SUBJECT: INFRASTRUCTURE THREATENS AMAZON FOREST CONSERVATION

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1. (U) SUMMARY. Vulnerability of Amazonian rainforests is increasing as a result of rising commodity prices and regional infrastructure integration, as well as global climate change and fire practices. This is the first in a two-part series addressing the regional impacts of agricultural expansion and infrastructure (Part 1), and climate change and fire (Part 2) on Amazon forest conservation.

Uncontrolled expansion of ranching (cattle), farming (soy, cane sugar, palm oil), and logging, poses a serious threat of deforestation and forest degradation in the Amazon biome. Expansive plans for transnational road systems (e.g., Inter-Oceanic Highway) and the Madeira hydroelectric waterway complex continue to move ahead in the southwestern Amazon basin, promising to trigger considerable change in some of the most biodiverse ecosystems on the continent, and fortify a growing East-West trade axis driven by the rising economic demands of Asian markets. Although regional coordination has proven challenging amongst Andean and Amazon countries, examples of cross-border governance in these integrating regions offer hopes for future improvement in resource management and environmental conservation. This cable draws from information in peer-reviewed articles (Philosophical Transactions, v. 363) and country research. END SUMMARY.

COMMODITY PRICE INCREASES DRIVE LAND USE IN AMAZON RAINFOREST

12. (U) The Amazon rainforest is home to one out of every five mammal, fish, bird and tree species in the world. The trees of the Amazon forest contain between 90-140 billion tons of carbon, equivalent to 9-14 decades of global human-induced carbon emissions.

The Amazon biome plays a vital role in the global water balance by evaporating eight trillion tons of water through Amazon forests each year, influencing atmospheric circulation on a global scale. NOTE: A biome is defined as a major regional ecological community characterized by distinctive life forms and principal plant and animal species. This cable is focused on the issues related to the ecological community of the Amazon rather than on what each country legally considers as Amazon (e.g., states of the Legal Amazon in Brazil). END NOTE.

13. (U) Higher global commodity prices offer compelling incentives for farmers, corporations, and nations to increase the productive capacity of agricultural properties and lands which have been

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considered unproductive. In the Amazon basin, rising commodity prices are pushing the agricultural frontier deeper into pristine lands that lack access to existing infrastructure. In a model driven by agricultural expansion, regional economic success is linked to expanding infrastructure that facilitates transportation, market access, and capital mobility.

14. (U) By default, the spread of agricultural production and infrastructure into the Amazon basin alters natural vegetation and land conditions. Deforestation and forest degradation are the most immediate consequences of land use changes. However, the intrusion of agriculture and roads into pristine regions also modifies the traditional land use practices and socio/economic conditions of indigenous inhabitants and riverine populations in the Amazon biome.

NOTE: The FAO defines forest degradation as the impoverishment of woody material caused by human activities such as over-grazing, over-exploitation (for firewood), repeated fires, or other natural causes. Degradation may occur as a rapid or gradual reduction in biomass, changes in species composition, and soil degradation. END NOTE.

15. (U) Uncontrolled expansion of ranching (cattle pastures), farming, road building, and logging poses the most serious threat for deforestation and forest degradation in the Amazon basin, particularly in the more remote transboundary regions. Wood extraction for charcoal production is blamed for a second wave of forest degradation that follows the first deforestation sweep for high-value logs. Deforestation also closely follows roads and other infrastructure developed for oil and gas extraction. New challenges in the forest frontier arise from the potential expansion of biofuels.

16. (U) Illegal logging has already degraded forests in the eight countries of the Amazon basin. Claiming 62 percent of Amazon basin land, Brazil is responsible for 80 percent of its deforestation. Recent reporting indicates that forests in one third of the Brazilian Amazon state of Rondonia have been damaged. A sense of lawlessness pervades Rondonia, a state in which logging trucks become kings by night, and the buzz of saw mills is heard from

sunset to sunrise.

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¶7. (U) The devastation in Rondonia is largely connected to the BR-364, one of the primary regional highways connecting the Brazilian cities of Porto Velho and Rio Branco and passing into Peru. This highway lays the initial axis of what will become the Inter-Oceanic highway, a high priority transboundary integration project for Brazil-Bolivia-Peru. Social conflicts along this alignment grow every day more intense between developers, extractive actors, migrants, and indigenous communities. Transnational border and social conflicts in the Amazon basin have historically posed intermittent regional security concerns owing to disputes over land tenure rights, land use in indigenous reserves, resource allocation, and extraction rights in the mining, oil/gas, timber, and agricultural sectors.

¶8. (U) Although lower than Brazilian statistics, there are also serious threats from Amazonian deforestation in Bolivia, Ecuador, Peru, and Colombia, primarily from commercial logging, agricultural expansion, fuel wood collection, subsistence agriculture, slash-and-burn land-clearing for cattle pasture, illegal drug cultivation, mining, and oil/gas development. Although oil/gas exploration in Peru is reportedly a minor contributor to deforestation, 75% of the Peruvian Amazon is marked for oil/gas concession; such exploration also plays an active role in deforestation in Ecuadorian.

GOVERNMENTAL REGULATORY APPROACHES: FORM OR FUNCTION?

¶9. (U) With Brazil's recent change in Environment Minister (REFTEL 08 BRASILIA 750), environmental shows of force have been making headlines weekly. In a recent crackdown on illegal logging, the Brazilian government seized thousands of cattle grazing on public land in the Amazon rain forest. In May, Brazil's environmental protection agency seized several tons of grain, mostly soy and corn, grown on illegally deforested lands. In June, sixty steel companies across Brazil (not all in the Amazon) were charged nearly USD\$250 million in fines for using illegally harvested forest charcoal. In spite of these recent actions, and after three years of decline, deforestation in Brazil's Amazon basin appears to be accelerating again, likely in response to international demand for agricultural products. It is hoped that Brazil's new forestry law (2006), will help preserve forests through strategic planning, land tenure

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programs, implementation of forest concessions (job creation), and promotion of sustainable forestry.

¶10. (U) Bolivia is reported to be the world leader in tropical forest certification, according to the World Wildlife Fund. In 2005, Bolivia's certified forest sector generated USD\$16 million from exports. Bolivia's government has passed laws requiring the logging industry to replant forests to ensure sustainability; however, loopholes have made it possible for many firms to bypass the requirement. In Peru, the Research Institute of the Peruvian Amazon reported that 95 percent of the country's mahogany is harvested illegally. As of early 2006, not a single commercial logger had been imprisoned in Peru for illegal logging. Peru's recent creation of an Environmental Ministry and the stringent forestry requirements of the U.S.-Peru Trade Promotion Agreement promise to bring about positive changes in logging, processing, and prosecution in the Peruvian Amazon. In Ecuador, legally harvested wood essentially does not exist. Since 2000, the poorly-funded Ministry of Environment has attempted to decentralize responsibility for logging enforcement by placement of officers in remote regions, in an effort to combat Ecuador's reported 3% average annual deforestation rate. Corruption persists, however, as certification of illegally-harvested wood continues.

INFRASTRUCTURE EXPANSION IN SOUTHWESTERN AMAZON RAINFOREST

¶11. (U) Infrastructure development in the name of regional economic

integration poses a significant challenge to environmental sustainability in the Amazon basin. IIRSA, the Initiative for Integration of Regional Infrastructure in South America (adopted 2000), aims to meet regional connectivity needs via the physical integration of transport, energy, and telecommunications infrastructure for twelve South American countries. IIRSA supporters emphasize the need for improved transportation systems, the desire to harness surplus sources of energy, and the goal to ease economic isolation of small- and medium-sized populations across South America. Environmental concerns of IIRSA focus on the extensive alterations to landscapes and livelihoods that would occur with the creation of 10 integration and development hubs.

¶12. (SBU) Just as IIRSA projects intend to improve efficiency of

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resource extraction from the South American heartland, the projects may also accelerate cross-continent transportation of agricultural products to overseas markets. This regional integration offers a potential realignment of the formerly dominant North-South trade axis between Latin America, Europe, and the U.S., with a new East-West trade axis directed towards the growing economic demands of Asian countries (e.g. China and India). COMMENT: As the economies of China and India grow exponentially, there is the possibility that the current North-South axis of U.S.-dominated trade will be diluted by an East-West axis based on investment from Asian countries and raw materials exportation from regional players (Brazil, Ecuador, Peru, Colombia, and Bolivia). Such an East-West axis, offering Asian investors a "geopolitical window" into South America, could have negative implications for the environment and foreign relations in the region. END COMMENT.

¶13. (U) Two high priority IIRSA programs are examined here with a focus on potential environmental impacts in the tri-border MAP region of Peru-Brazil-Bolivia:

- The Inter-Oceanic Highway road/rail connections from Brazil, Bolivia to ports in Peru; and
- The Madeira Dam complex (producing hydroelectric power and hydrovias (waterways) for transport from Bolivia to the Atlantic).

¶14. (U) The MAP region in the southwestern Amazon biome draws its name from the 3 contiguous regional provinces of Madre de Dios (Peru), Acre (Brazil, neighbor state to Rondonia), and Pando (Bolivia). This region (300,000 km² land and 700,000 inhabitants) is characterized by tremendous biological and cultural diversity, as well as high vulnerability to climate change owing to its location in the drought-prone southwestern Amazon. The region is predicted to lose 67 percent of its forest cover and 40 percent of its mammalian biodiversity by 2050 if current trends in land use and road construction are maintained, according to Soares-Filho (Federal University of Minas Gerais) and colleagues.

ROAD CONSTRUCTION: OFFICIAL AND UNOFFICIAL

¶15. (U) Although road building is considered instrumental to the viability of contemporary economic activity for South America, it also increases habitat/forest fragmentation and the ecological

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vulnerability of the Amazon forest. In the MAP region, the IIRSA Inter-Oceanic highway project (under construction) entails the construction/renovation of 2603 kilometers of highway connecting the Amazonian state of Acre (Brazil) with Peruvian port cities (Ilo, Matarani, and San Juan de Marcona), passing close to the Bolivia border.

¶16. (U) Discussions of infrastructure expansion, however, cannot simply focus on the planning and construction of official roads. An axiom of infrastructure development in the Amazon biome is that 'road construction begets more road construction'. Infrastructure synergies demonstrate that the paving of official roads motivates unofficial road construction, introducing intersecting forest extraction networks that penetrate deeper into pristine territories to exploit natural resources beyond official corridors.

¶17. (U) Official roads are interregional highways that link major cities, appear on official maps, and form sparse networks, leaving large blocs of forest intact. Official road construction via official government projects receives attention from regulatory agencies and financial institutions.

¶18. (U) In contrast, unofficial roads are narrow, often winding paths that yield highly fragmented forest mosaics and exacerbate ecological vulnerability. These unofficial, unmonitored roads are built to gain access to land or timber, or in order to support local livelihoods and community development. Environmental consequences of unofficial road construction can include: deeper forest access for raw material extraction, habitat/forest fragmentation, introduction of exotic species, intensified and expanded agricultural burning, stream degradation, and increased forest fire risk.

¶19. (U) Beyond road construction, pipeline alignments from oil and gas exploration have historically created similar deforestation and degradation outcomes. Pipeline alignments in the Amazon biome have opened remote regions to migration and settlement ahead of official roads, resulting in a proliferation of secondary roads that fragment the Amazon rainforest into isolated forest blocks. Current expansion of secondary roads is less tied to pipelines and more linked to official roadways providing transportation for

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agricultural products, timber, and access for resource exploration.

CONSTRUCTION OF HYDROELECTRIC DAMS AND WATERWAYS

¶20. (U) IIRSA's Madeira River complex, a transboundary industrial hydroelectric and hydrovia (waterway) complex planned for the MAP tri-border region, will also alter the southwestern Amazon basin with extensive construction, an agricultural "boom" anticipated to result in significant expansion of soybean cultivation, and an immigration influx predicted to draw more than 100,000 new settlers to this vulnerable region.

¶21. (U) The Madeira River project is a coordinated international development project intended to facilitate regional and international trade. The project consists of two dams in Brazil's Rondonia state, the San Antonio and Jirau, the Brazil-Bolivia bi-national Guajara-Mirin dam, the Cachuela-Esperanza dam on Bolivia's Beni River, as well as a series of navigation locks that will create a 4,200 km hydrovia into the navigable Amazon basin.

¶22. (U) In December 2007 a Brazilian consortium won the auction for construction and operation of the planned 3,150 megawatt (MW) Santo Antonio hydroelectric dam. In May 2008, a French, Suez-led consortium won the auction for the upstream planned Jirau dam (3,300 MW), only 80 km from Bolivia. These projects are expected to supply 8% of Brazil's energy demand, 75% of which is currently supplied by hydroelectric dams. With so many hydroelectric eggs in one energy basket, energy specialists question whether Brazil will have enough alternative generation capacity and flexibility to meet demands during prolonged periods of drought. Energy needs in Bolivia and Peru are less dependent upon hydroelectric power. COMMENT: The headwaters of all three Madeira River tributaries are located in the Peruvian and Bolivian Andean highlands. Consequently, glacier melt driven by climate change is likely to have a major impact on future hydroelectric potential for the Madeira River complex. At present, only 30% of these Andean glaciers have been studied, and it is estimated that 80-90% of the studied glaciers have already lost 30% of their area since the 1960s. END COMMENT.

¶23. (U) Although no attempt has been made to assess the cumulative impacts of the massive Madeira complex, a myriad of environmental

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concerns surround the construction of the two dams, including: deforestation and inundation of indigenous lands; decimation of a diverse native fish population; public health disease outbreaks

(yellow fever, malaria); water quality deterioration and mercury contamination of river and ground waters; and river bed sedimentation yielding diminishing hydroelectric efficiency.

INFRASTRUCTURE IMPLICATIONS ACROSS THE AMAZON BASIN

¶24. (U) Other transboundary IIRSA projects that will directly affect areas of high biological diversity and indigenous preserves include: Manta-Manaus corridor (Ecuador, Brazil); hydrocarbon extraction in Peru; Pucallpa-Cruzeiro do Sul (highway integration between Brazil and Peru); hydroelectric plant Coca-Codo-Sinclair (Ecuador); and Northern Corridor Bolivia (roads). The breadth of these projects is indicative of the grand ambitions for infrastructure development in the Amazon basin, which can lead to cumulative and indirect impacts far beyond those considered in project-specific environmental impact assessments.

¶25. (U) In particular, the Manta-Manaus corridor (from Ecuador into the mainstream Amazon River port city of Manaus in Brazil), proposed to pass over the Andes through one of the best preserved sections of the Amazon rainforest, is cause for concern. While the Ecuadorian government is proposing to limit new road construction to the last 60 km west of the river port at Coca, current highway expansion and increased traffic along the route will no doubt have environmental repercussions. This corridor promises to position Ecuador as a bridge for access to markets elsewhere in South America, and to both the Pacific and Atlantic coasts. Members of the Ecuadorian government have referred to it as "the alternative to the Panama Canal."

A TENSION AMIDST DEVELOPMENT

¶26. (U) The growing tension between implementation of a sustainable (environmentally sound) economic model and the continuation of an extractive development model is increasingly apparent in the MAP region and elsewhere in developing countries of South America. The tension arises from a variety of factors including internal and regional politics, social movements of native populations,

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environmental conservation efforts, and international economic pressures responding to global commodity price increases.

¶27. (U) The tri-nation MAP region occupies a strategic position in the regional natural resource economy owing to the convergence of waterways, the expansion of the agricultural frontier, growing interest in biofuels, and the substantial oil/gas resources of Peru, Ecuador, and Bolivia.

¶28. (U) However, as the case of the Madeira River Dam makes clear, this strategic position does not necessarily benefit native populations, nor does it assist efforts to protect vulnerable regions of high biodiversity. Instead, the two strong drivers of resource extraction and infrastructure development intensify pressures to remain in the trap of an unsustainable economy at odds with sustainability and environmental conservation. NOTE: The Bolivian government toned down its originally strong criticism of the Madeira River project to maintain political support in a geo-political landscape dominated by development institutions financed by the continent's largest economies (i.e., Brazil). END NOTE.

¶29. (U) The MAP Initiative was launched in the year 2000 to promote extra-governmental leadership and collaboration between professionals and community leaders in the tri-national frontier region of Bolivia-Brazil-Peru. This initiative fosters participation of local communities, NGOs, universities, and government agencies in a hybrid regional governance model, which is understood as a social, economic, and political process in which civil society and governments are engaged towards their own self-management. The MAP initiative has shown preliminary success in building capacity and achieving a regional governance approach to infrastructure improvement, economic development, resource management, and ecosystem protection in this transboundary area where cultural wealth stands beside economic poverty.

¶30. (SBU) Tension between a sustainable environmental development model and a resource extraction model are evident in Ecuador, where President Correa has offered to forgo development of the ITT (Ishpingo-Tambococha-Tiputini) field in Ecuador's Yasuni National Park, home to uncontacted tribes, if the international community

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will compensate Ecuador for the profits it estimates it would earn over 35 years of drilling, or \$350 million annually (REFTEL 07 QUITO 1497). The innovative offer has been on the table for a year, and Correa has said that if donors do not agree by October 2008, he will allow development. Chinese oil companies are interested in the field, and have met several times with the government; so far the international community has offered only \$1,000 to set up an ITT conservation secretariat. COMMENT: The proposal has been presented as a choice between conservation and extraction, with no middle road in sight; this will no doubt lead to tension with indigenous groups if and when the field is developed. END COMMENT.

REGIONAL CHALLENGES AND ALTERNATIVE GOVERNANCE MODELS

¶31. (U) Recently reported increases in regional Amazonian deforestation demonstrate how conservation efforts can founder in the face of the twin pressures of a global economy with rising commodity prices and national governments accelerating their economies via infrastructure integration.

¶32. (U) Despite the ecologically sensitive rhetoric of governments in Ecuador, Bolivia, Brazil, Venezuela, and other South American countries, planning for IIRSA's transboundary mega-development projects continues to move ahead, promising to permanently alter some of the most biodiverse ecosystems on the planet, as well as the peoples that inhabit them. At the same time, there is a growing awareness among scientists, environmentalists, social movements, and some government representatives that innovative models of governance are needed to mitigate the negative socio-economic and ecological effects of infrastructure and agricultural expansion on the Amazon rainforest.

¶33. (U) As an example of institutional strengthening, USAID's regional Initiative for the Conservation in the Andean Amazon (ICAA) builds capacity for enhanced governance and increased transparency within infrastructure development. ICAA's Working Group on Infrastructure analyzes IIRSA projects, generates policy briefs, provides training for improved mitigation and compliance and convenes international finance agencies with civic and public stakeholders across the sector. A recent ICAA workshop brought together Ministerial representatives, indigenous leaders,

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conservationists, and infrastructure analysts to assess the current framework and gaps of the social-environmental assessments used to determine financing and mitigation measures in IIRSA infrastructure projects.

¶34. (U) Experiences in Brazil, Bolivia and Peru have shown, however, that working at a regional level is indeed a challenge, especially with current tensions between Andean nations and between the USG and Latin America. In an increasingly politicized environment, Bolivian threats to suspend international cooperation programs, tensions between Peru and Bolivia, tensions between Colombia and Ecuador, and Brazilian sensitivity to regional environmental projects (and NGO involvement) all suggest that political issues must be carefully considered in order to effect improved environmental conservation and regional cooperation on priority environmental issues.

¶36. (U) This cable was coordinated and cleared with Embassies in Lima, La Paz, Quito, and Bogota, FAS in Brasilia, and USAID and USFS in Washington.

SOBEL